

REMARKS

Claims 1-3, 5, 7, 13, 18-25, 33 and 34 are pending. Claims 1, 2, 5, 7, 13, 18 and 21 were amended to more particularly point out and distinctly claim the present invention. Claims 4, 6, 8-12, 14-17 and 26-32 are canceled. Claims 26-32 were withdrawn from further consideration as being directed to a non-elected invention under 37 CFR 1.142(b) and MPEP § 821.03. Claims 33 and 34 were added to further define the present invention. Support for the amended language is provided in at least Fig. 2D; Fig. 3A-3G, Fig. 7A-7C; and the corresponding text on page 7, lines 1-6, page 8, lines 3-6 and 11-19, page 13, lines 6-14 and page 15, lines 3-13 of the present application. Accordingly, no new matter has been entered. Withdrawal of all rejections of the pending claims is respectfully requested for at least the reasons set forth below.

Prior art rejections

Claims 1-3¹, 5, 7, 13, and 17-20 were rejected as being anticipated by U.S. Patent No. 6,023,171 (Boyette, Jr. et al), hereafter “Boyette.” Claims 21-25 were rejected as being anticipated by U.S. Patent No. 5,798,655 (Kazama et al.), hereafter “Kazama.” Claims 3 and 15 were rejected as allegedly being unpatentable over Boyette, Jr. et al. in view of U.S. Patent No. 6,616,966 (Mathieu et al.), hereafter “Mathieu.” Withdrawal of all prior art rejections as they pertain to the amended claims is respectfully requested for at least the following reasons.

1. Patentability of claim 1 over Boyette

Amended claim 1 reads as follows:

1. A probe module comprising:
a probe base having a plurality of conductive metal traces;
a plurality of probe pins attached to the probe base, each of the
probe pins comprising an elongated body wherein at least part of the
elongated body is bonded to the plurality of conductive metal traces of the
probe base; and

¹ Claim 4 was canceled. It is believed that the Examiner meant to refer to claim 3.

a circuit interconnect device for connecting the plurality of probe pins to an inspection apparatus.

Boyette does not disclose or suggest a probe base having a conductive metal trace or probe pins bonded to conductive metal traces. Referring to Figs. 2 and 3 of Boyette, the probe pins 28 and 30 in Boyette are connected to mounting block 32 via soldering and epoxy adhesive. In turn, the mounting block 32 is connected to a carriage 26 via a screw 27. See, column 4, lines 39-60. No conductive metal traces are provided in Boyette.

Amended claim 1 is believed to be patentable over Boyette for at least the reasons discussed above. Kazama does not make up for the above-noted deficiencies in Boyette.

2. Patentability of claim 18 over Boyette

Amended claim 18 reads as follows:

18. A probe pin for a probe module having a probe base, comprising:
 a probe pin body that is elongated and has at least a portion bonded to a conductive metal trace of a probe base;
 a probe pin head extending from the probe pin body; and
 a probe pin tip provided on the probe pin head.

The portion of Boyette's probe pin that the Examiner refers to as the "probe pin body" does not have a portion bonded to a conductive metal trace of a probe base. As discussed above, the probe pins 28 and 30 in Boyette are connected to mounting block 32 via soldering and epoxy adhesive. In turn, the mounting block 32 is connected to a carriage 26 via a screw 27.

Amended claim 18 is believed to be patentable over Boyette for at least the reasons discussed above. Kazama does not make up for the above-noted deficiencies in Boyette.

3. Patentability of claim 21 over Kazama

Amended claim 21 reads as follows:

21. A probe module comprising:

- a probe base having a plurality of conductive metal traces, the probe base being defined by a first end and a second end;
- a plurality of probe pins electrically connected to the conductive metal traces of the first end of the probe base; and
- a flexible circuit board electrically connected to the conductive metal traces of the second end of the probe base, thereby allowing the plurality of probe pins to be electrically connected to the flexible circuit board via the plurality of conductive metal traces.

The Examiner asserts that the claimed “probe base” is equivalent to the end portion of electrodes 25a in Figure 6 of Kazama. Applicants respectfully disagree. Column 2, lines 15-18 of Kazama discloses that the electrodes 25a are a part of the flexible circuit board 25. Therefore, the end portion of the electrodes 25a cannot be a probe base.

Furthermore, the flexible circuit board 25 in Kazama is not electrically connected to any conductive metal traces. The Examiner alleges that the conductive metal traces are the interconnection trace to connect the pins (electrodes) 25a and (flexible circuit) board 25. However, no such interconnection traces are described in Kazama.

In the embodiment of the present invention recited in claim 21, the conductive metal traces of the probe base facilitate the interconnection between the probe pins and the flexible circuit board. In contrast to claim 21, the electrodes 25a in Kazama are part of the flexible circuit board 25 (column 2, lines 15-21), and therefore no interconnecting conductive metal traces would even be needed, and none are disclosed or suggested in Kazama.

Amended claim 21 is believed to be patentable over Kazama for at least the reasons discussed above. Boyette does not make up for the above-noted deficiencies in Kazama.

4. Patentability of dependent claims

The dependent claims are believed to be allowable because they depend upon respective allowable independent claims, and because they recite additional patentable steps and elements.

Conclusion

Insofar as the Examiner's rejections were fully addressed, the instant application is in condition for allowance. A Notice of Allowability of all pending claims is therefore earnestly solicited.

Respectfully submitted,

MIN-CHIEH CHOU, et al.

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(Date)
CLARK A. JABLON
Registration No. 35,039
AKIN GUMP STRAUSS HAUER & FELD LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, PA 19103-7013
Telephone: 215-965-1200
Direct Dial: 215-965-1293
Facsimile: 215-965-1210
E-Mail: cjablon@akingump.com

CAJ/PAI/gem